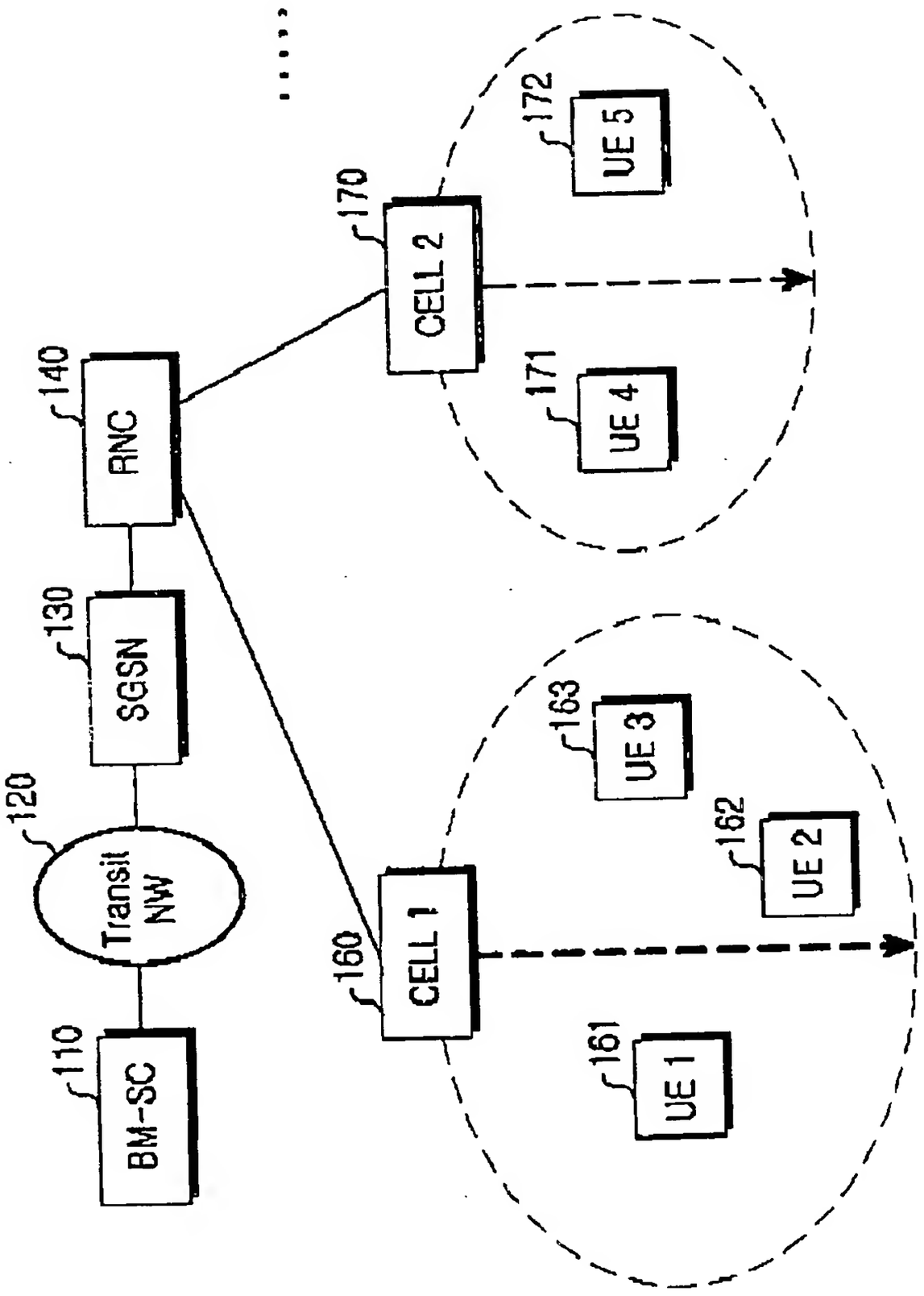

FIG.1
(PRIOR ART)

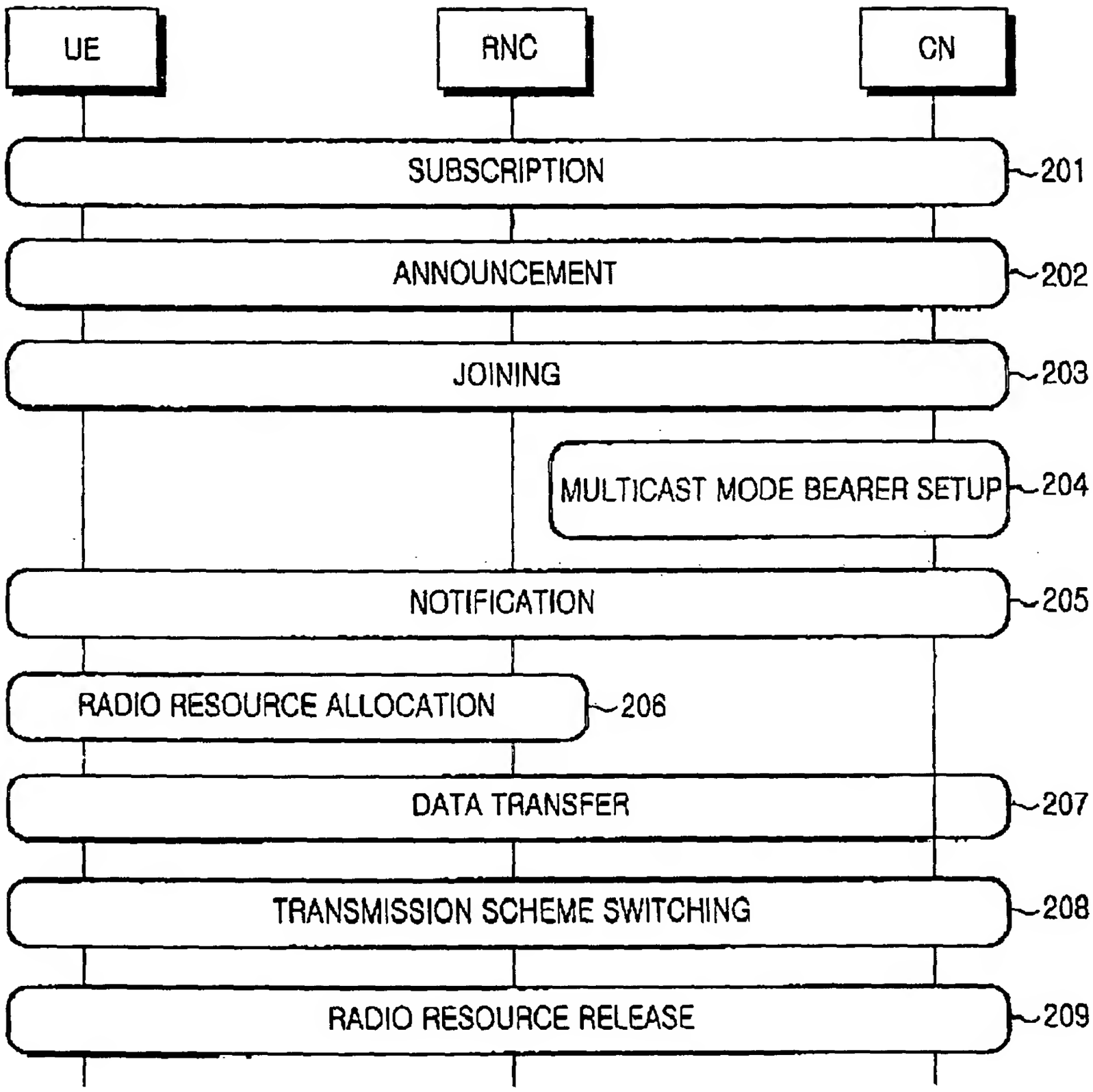

FIG.2
(PRIOR ART)

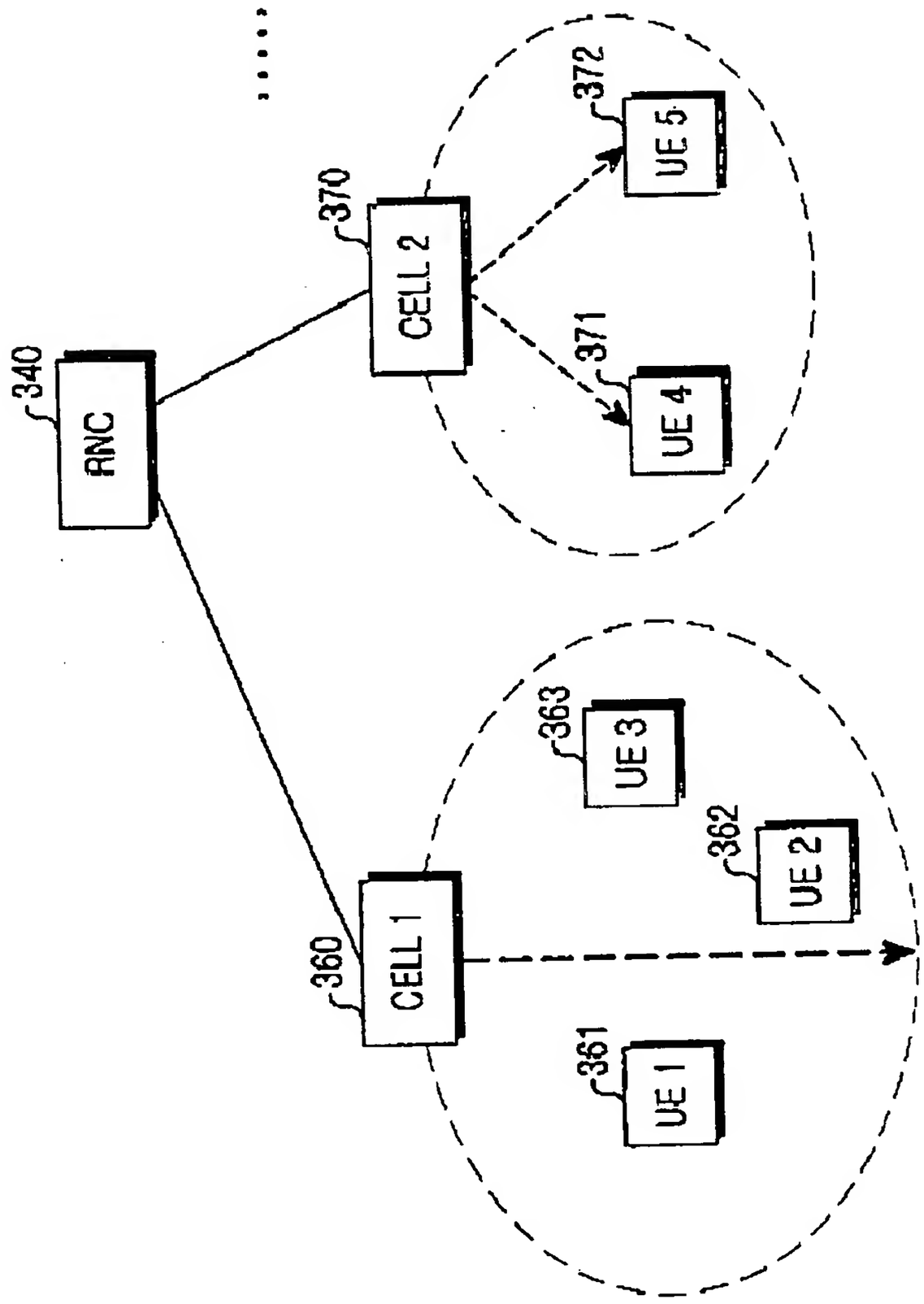

FIG.3
(PRIOR ART)

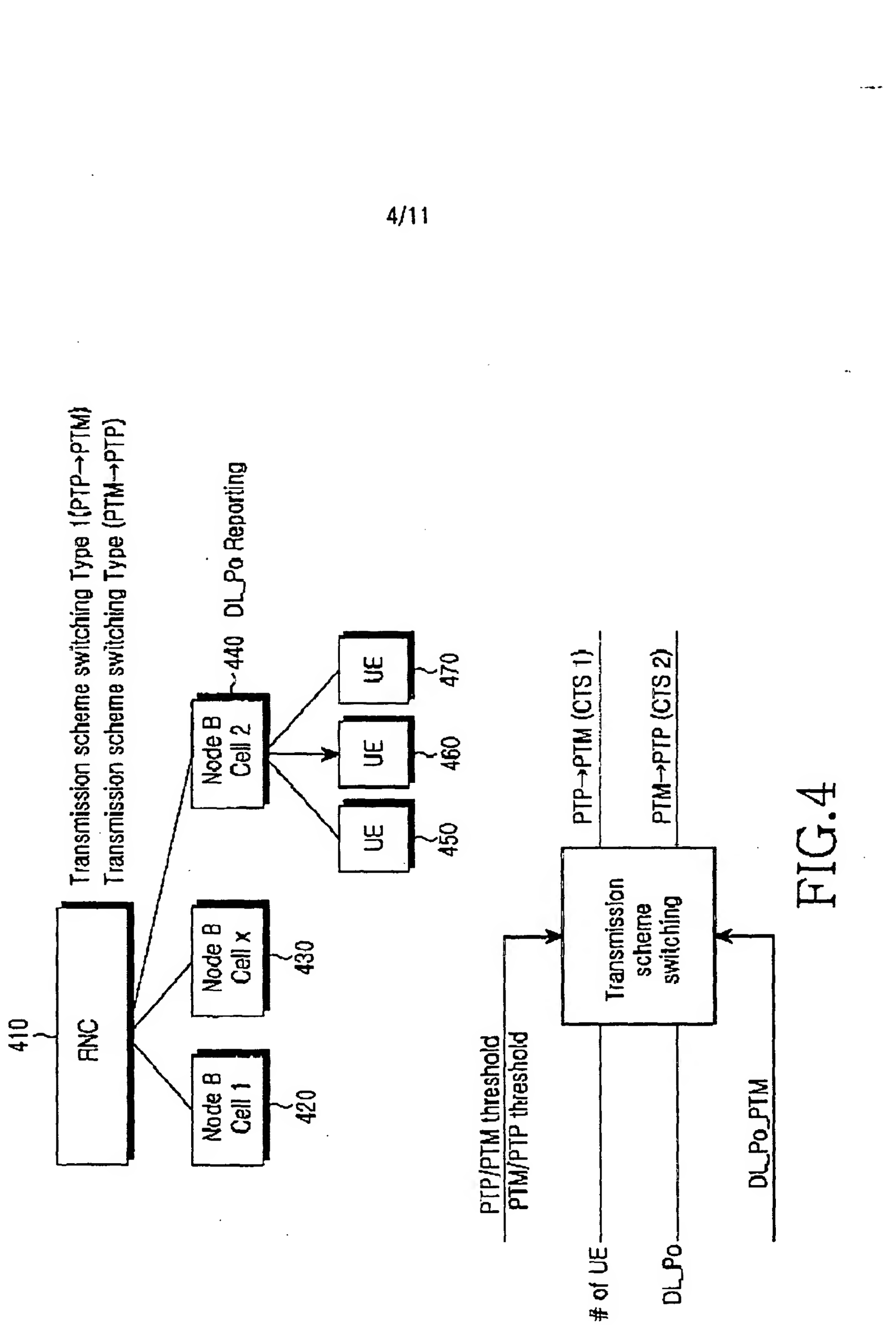
410
RNC
Node B
Cell 1
420
Node B
Cell x
430
Node B
Cell 2
440
UE
450
UE
460
UE
470
Transmission scheme switching Type 1(PTP→PTM)
Transmission scheme switching Type (PTM→PTP)
DL_Po Reporting
PTP/PTM threshold
PTM/PTP threshold
# of UE
DL_Po
Transmission scheme switching
PTP→PTM (CTS 1)
PTM→PTP (CTS 2)
DL_Po_PTM

FIG.4

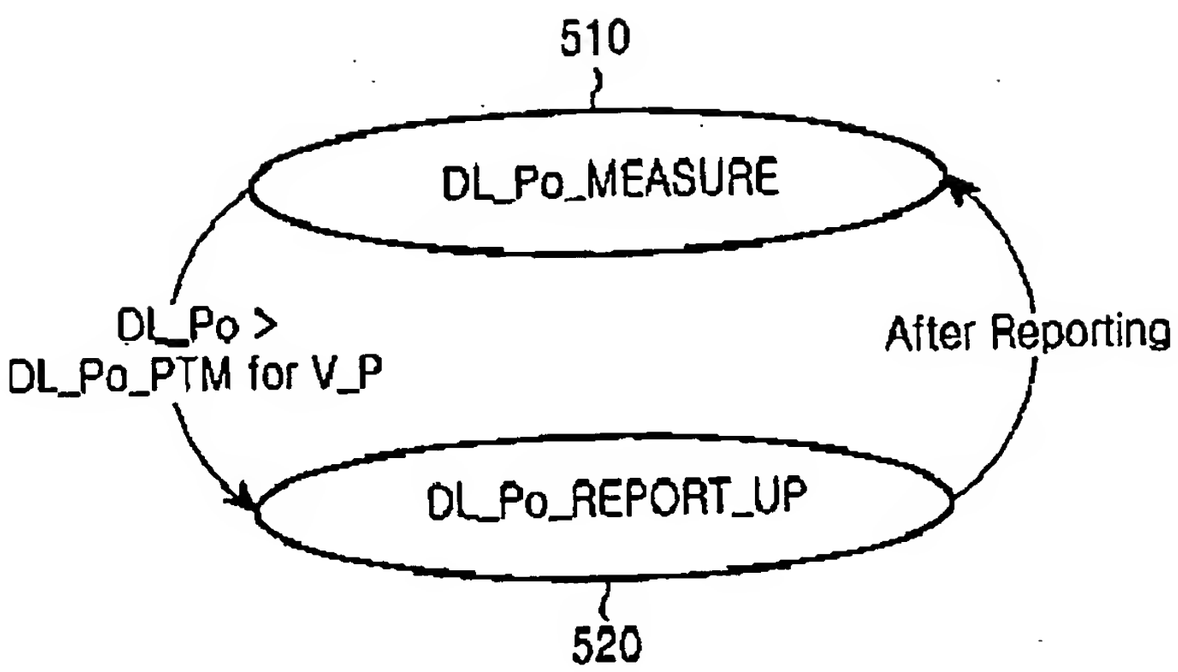
510
DL_Po_MEASURE
DL_Po >
DL_Po_PTM for V_P
After Reporting
DL_Po_REPORT_UP
520

FIG.5A

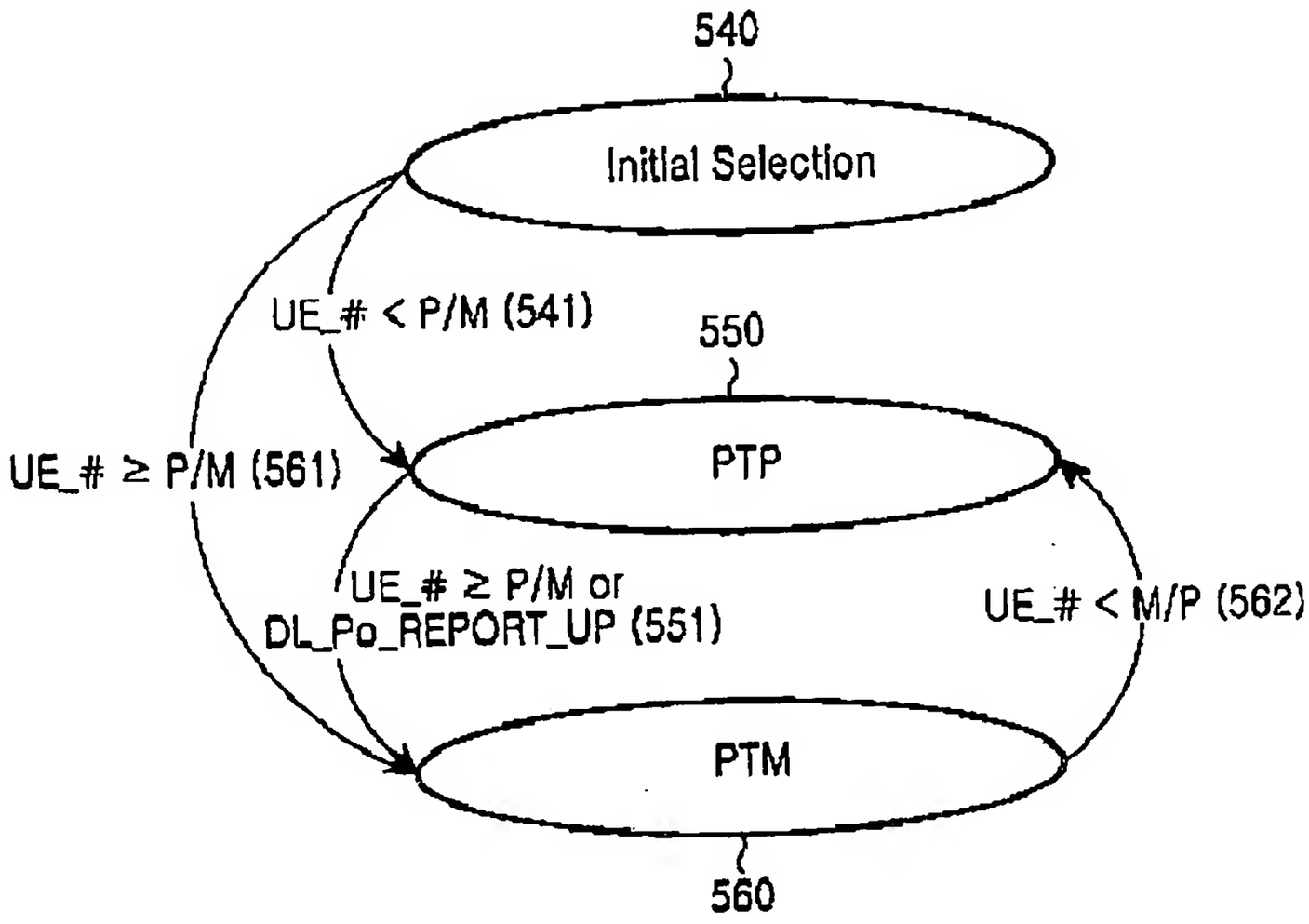
540
Initial Selection
UE_# < P/M (541)
550
UE_# ≥ P/M (561)
PTP
UE_# ≥ P/M or
DL_Po_REPORT_UP (551)
UE_# < M/P (562)
PTM
560

FIG.5B

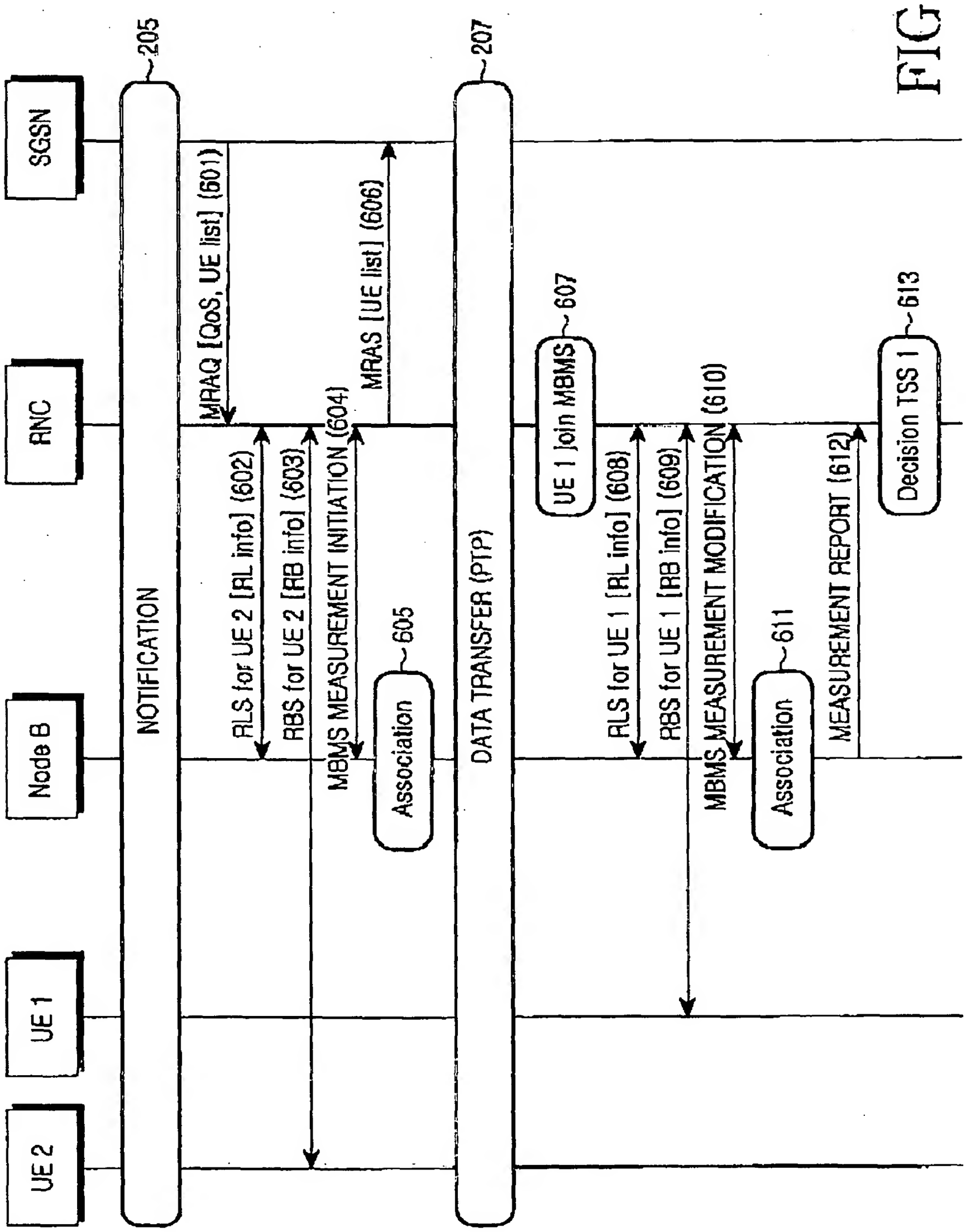
SGSN
RNC
Node B
UE 1
UE 2
205
207
NOTIFICATION
MRAQ [QoS, UE list] (601)
RLS for UE 2 [RL info] (602)
RBS for UE 2 [RB info] (603)
MBMS MEASUREMENT INITIATION (604)
MRAS [UE list] (606)
Association 605
DATA TRANSFER (PTP)
UE 1 join MBMS 607
RLS for UE 1 [RL info] (608)
RBS for UE 1 [RB info] (609)
MBMS MEASUREMENT MODIFICATION (610)
Association 611
MEASUREMENT REPORT (612)
Decision TSS 1 613

FIG.6A

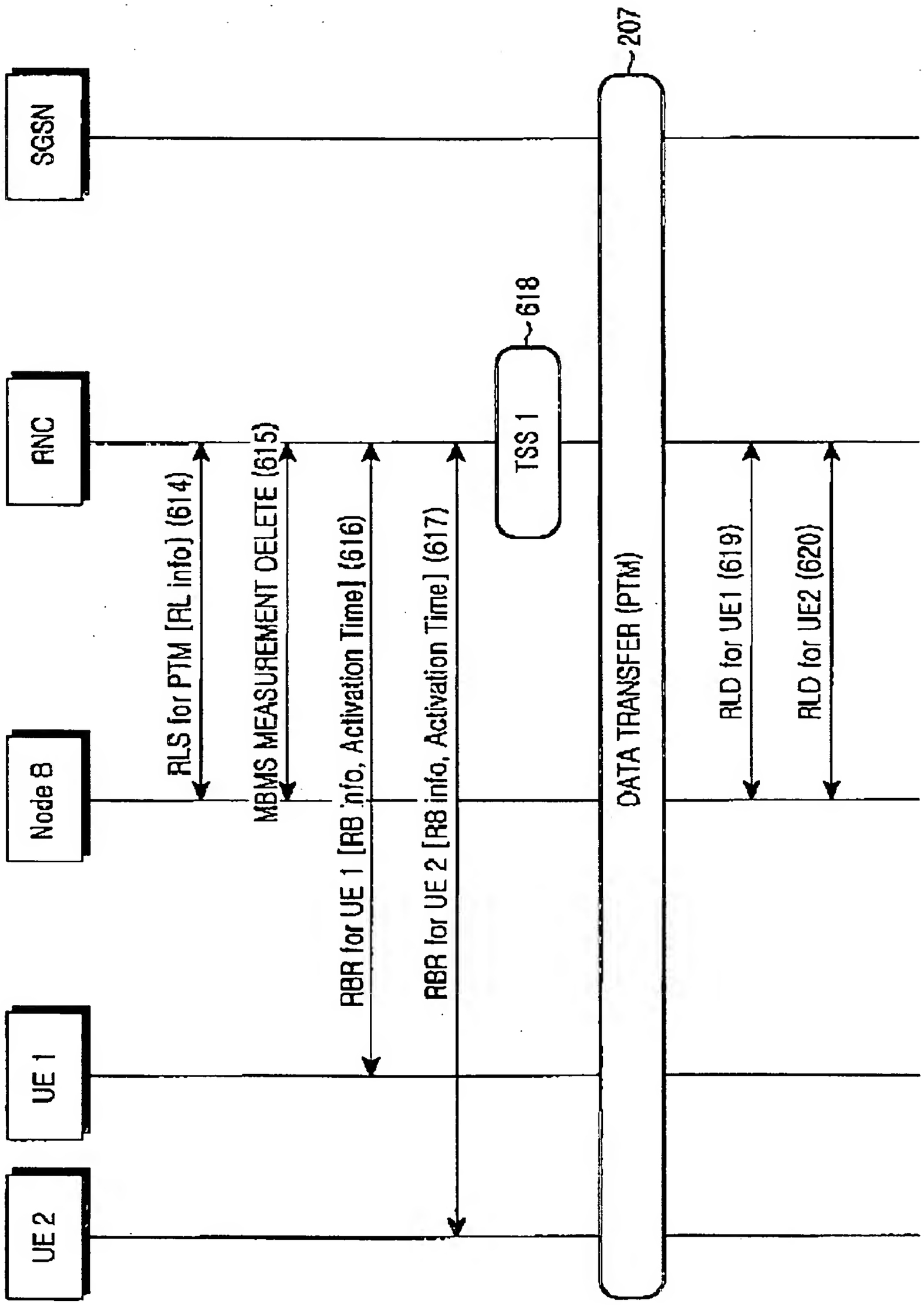
SGSN
207
RNC
Node B
RLS for PTM [RL info] (614)
MBMS MEASUREMENT DELETE (615)
RBR for UE 1 [RB info, Activation Time] (616)
RBR for UE 2 [RB info, Activation Time] (617)
TSS 1
618
DATA TRANSFER (PTM)
RLD for UE1 (619)
RLD for UE2 (620)
UE 1
UE 2

FIG.6B

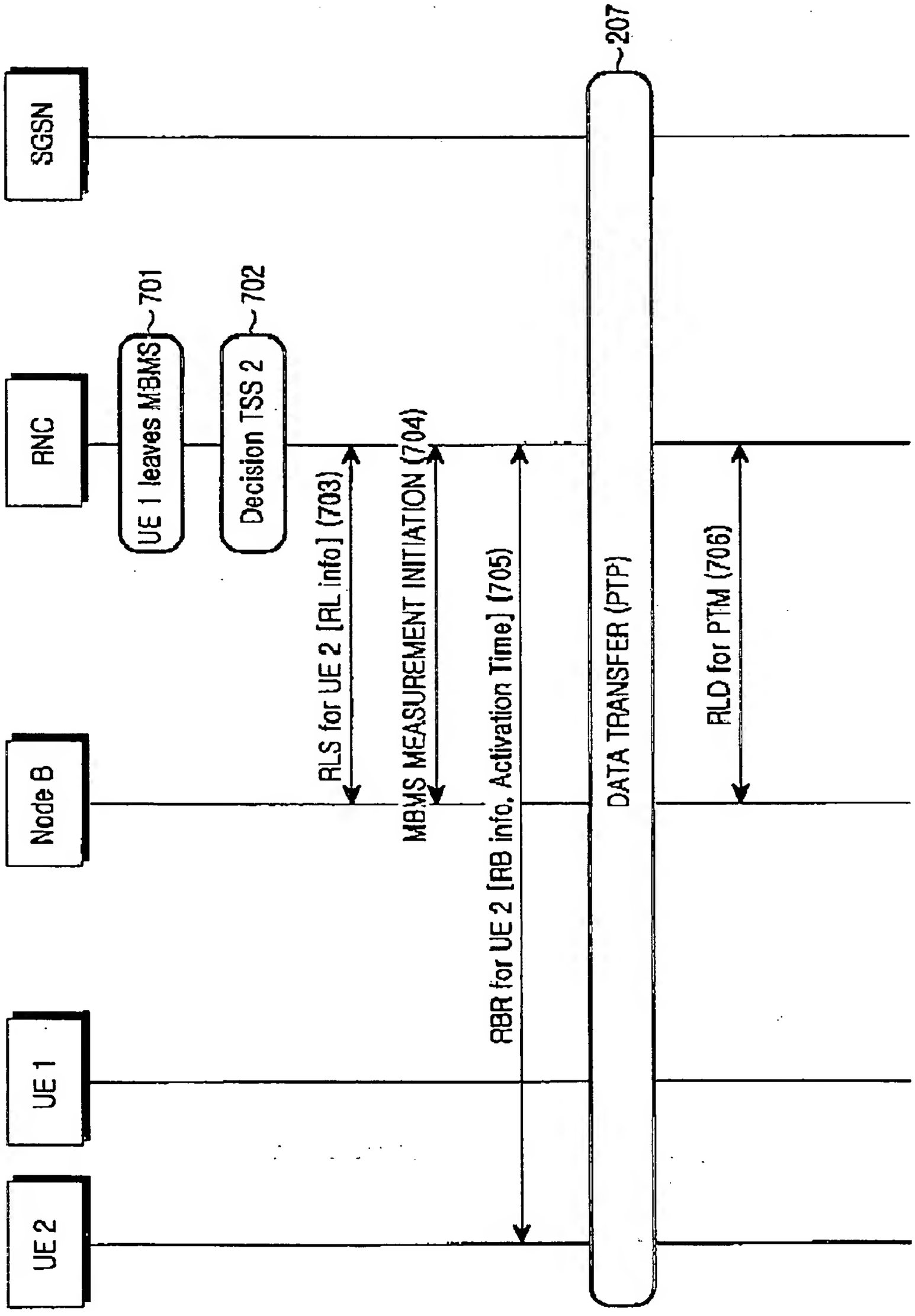
SGSN
207
RNC
UE 1 leaves MBMS
701
Decision TSS 2
702
Node B
RLS for UE 2 [RL info] (703)
MBMS MEASUREMENT INITIATION (704)
RBR for UE 2 [RB info, Activation Time] (705)
DATA TRANSFER (PTP)
RLD for PTM (706)
UE 1
UE 2

FIG.7

FIG.8A

MBMS MEASUREMENT INITIATION REQUEST

	IE/Group Name	Range
801	Message Type	
802	Measurement ID	
	CHOICE MBMS Measurement Object Type	
803	>RL to add	
804	>>RL Information	1..<maxnoof RLsMBMS>
805	>>>NBCC ID	
806	>>>RL ID	
807	>RL to delete	
	>>>RL Information	1..<maxnoof RLsMBMS>
	>>>NBCC ID	
	>>>RL ID	
808	Measurement Type	
809	Report Characteristics	

FIG.8B

MBMS MEASUREMENT INITIATION RESPONSE

	IE/Group Name	Range
810	Message Type	
811	Measurement ID	

FIG.8C

MBMS MEASUREMENT REPORT

	IE/Group Name	Range
812	Message Type	
813	Measurement ID	

FIG.8D

MBMS MEASUREMENT DELETE

	IE/Group Name	Range
814	Message Type	
815	Measurement ID	

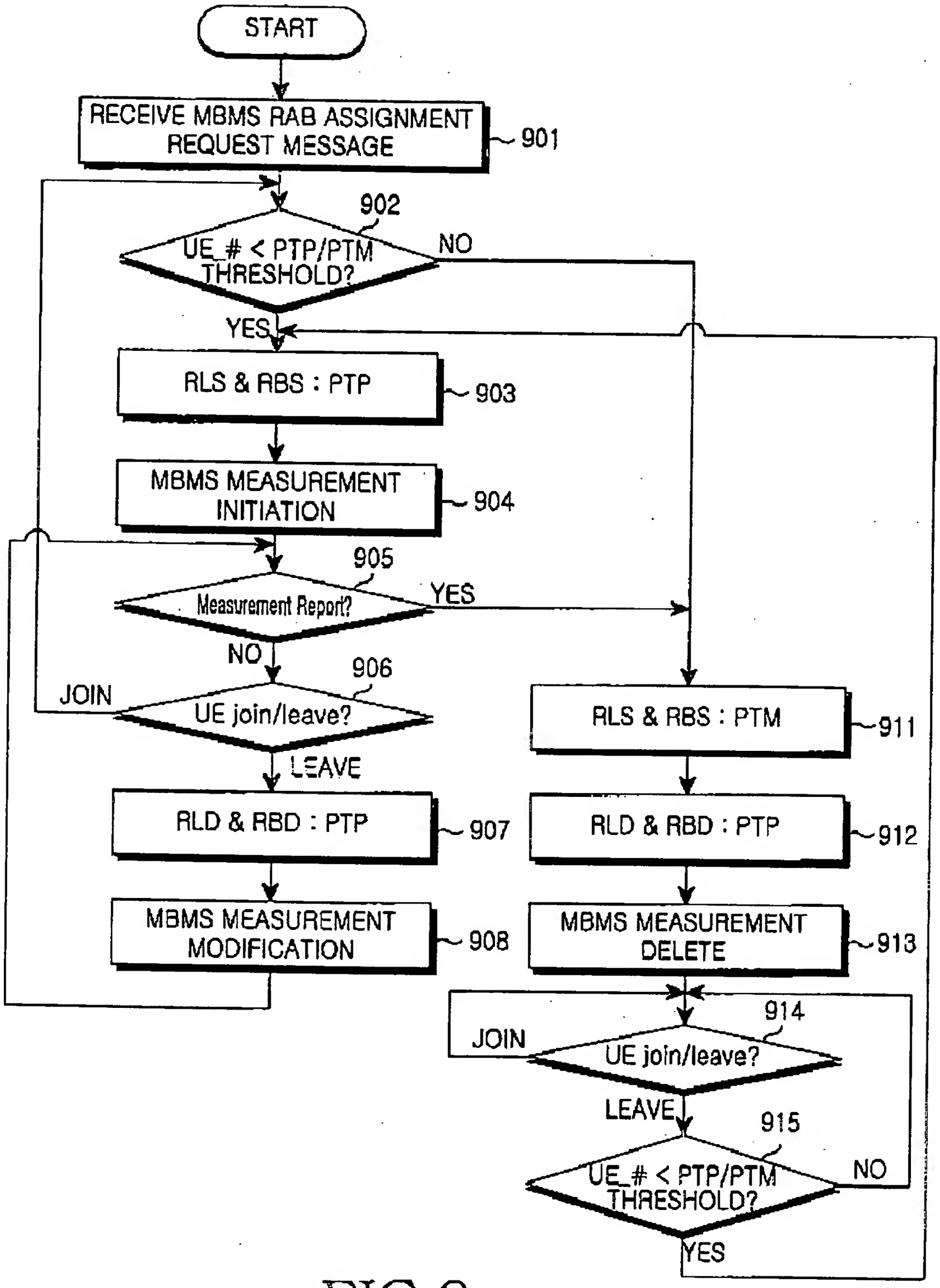
START
RECEIVE MBMS RAB ASSIGNMENT REQUEST MESSAGE
901
902
UE_# < PTP/PTM THRESHOLD?
NO
YES
RLS & RBS : PTP
903
MBMS MEASUREMENT INITIATION
904
905
Measurement Report?
YES
NO
906
JOIN
UE join/leave?
LEAVE
RLD & RBD : PTP
907
MBMS MEASUREMENT MODIFICATION
908
RLS & RBS : PTM
911
RLD & RBD : PTP
912
MBMS MEASUREMENT DELETE
913
914
JOIN
UE join/leave?
LEAVE
915
UE_# < PTP/PTM THRESHOLD?
NO
YES

FIG.9

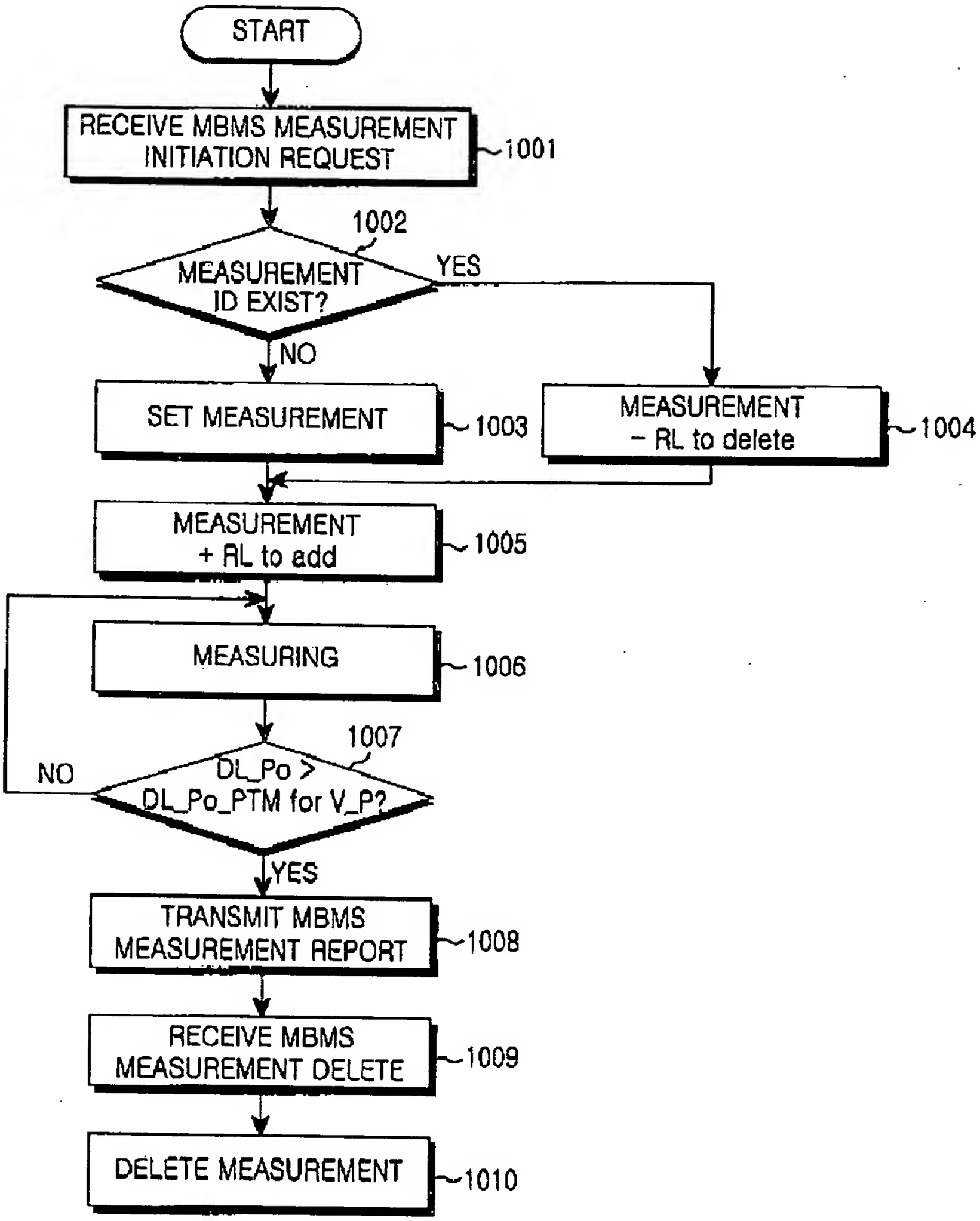
START
RECEIVE MBMS MEASUREMENT INITIATION REQUEST
1001
1002
MEASUREMENT ID EXIST?
YES
NO
SET MEASUREMENT
1003
MEASUREMENT - RL to delete
1004
MEASUREMENT + RL to add
1005
MEASURING
1006
1007
DL_Po > DL_Po_PTM for V_P?
NO
YES
TRANSMIT MBMS MEASUREMENT REPORT
1008
RECEIVE MBMS MEASUREMENT DELETE
1009
DELETE MEASUREMENT
1010

FIG.10